GOL'DMAN, A. L.

USSR/Physics - Susceptibility
            Magnetism

May 50

"Anisotropy of Magnetic Susceptibility of Silicon
Iron Monocrystals in Weak Magnetic Fields," A. L.
Gol'dman, V. V. Druzhinin, R. I. Yanus

"Zhur Tekh Fiz" Vol XX, No 5, pp 571-578.

Experimentally shows that, for weak fields, lowest
magnetic susceptibility (kappa) in monocrystal
disks of an alloy of iron with 3% silicon is ob-
tained during magnetization along diagonal axis of
cubic lattice, and highest is obtained along te-
tragonal axis. Anisotropy of susceptibility

PA 164T53

164T53

USSR/Physics - Susceptibility
            (Contd)

May 50

corresponding to N. S. Akulov's well-known "law of
anisotropy" exists only for magnetizations that ex-
ceed considerably the region of maximum suscepti-
bility. Submitted 25 Jun 49.

164T53

DUDKO, L.V.

"Solubility of ...

Sub 24 Jan 57, ...

Summary 21, 4 Se. 52, _Dissertations Presented for Degrees in Science and Engineering in Moscow in 1956._

LEYBUSH, A.G. , kand.khim.nauk; GOL'DMAN, A.M., kand.khim.nauk

Removal of carbon dioxide and carbon disulfide from coke gas
with the aid of monoethanolamine. Part 1. Trudy GIAP no.7:
167-187 '57.   (MIRA 12:9)
        (Coke-oven gas) (Gas purification) (Ethanol)

LEYBUSH, A.G., kand. khim. nauk; GOL'DMAN, A.M.; GRUZINTSEVA, A.N.

Side reactions during the removal of carbon dioxide and hydrogen
sulfide from coke-oven gas by the use of monoethanolamine. Part 3.
Trudy GIAP no.8:124-144 '57.   (MIRA 12:9)
            (Coke-oven gas) (Gas purification) (Ethanol)

S/064/60/000/004 001/006
B015/B060

AUTHORS: Furman, M. S., Doctor of Chemical Sciences, Goldman, A. M., Candidate of Chemical Sciences, Blevskiy, V. M., Candidate of Technical Sciences, Rubinskiy, V. R.

TITLE: Catalytic Oxidation of Cyclohexane With Compressed Air by the Continuous Method

PERIODICAL: Khimicheskaya promyshlennost', 1960, No. 4, pp. 1-8

TEXT: I. M. Rozenfel'd, A. A. Lavrichenko, I. L. Vaysman, N. K. Zhitnikova, and the personnel of the pilot plant of the Gubakhinskiy khimicheskiy zavod (Gubakha Chemical Works) took part in the work described here. The said pilot plant was set up for the experiments under discussion, and is schematically reproduced in Fig. 1. The long-lasting continuous operation of this pilot plant for the oxidation of cyclohexane with atmospheric oxygen under pressure yielded the following results among others: At a pressure of 18-24 atm, a temperature of 130-140°C, and with cobalt stearate serving as a catalyst in a

Card 1/5

Catalytic Oxidation of Cyclohexane With   S/654/60/000/001/001/006
Compressed Air by the Continuous Method   B01?/B0aa)

concentration of 4 g per 100 l of cyclohexane, the conversion of
cyclohexane amounts to 10-12% in one passage, and the yield of amine,
anol, and adipic acid is 80-81% (of the reacted cyclohexane). Water and
benzene reduce the oxidation rate. Slowing down the air supply improves
the exploitation of oxygen. Apart from adipic acid there develop
succinic, glutaric, and oxalic acids, with the parity weight of low
dicarboxylic acids amounting to about 30% of the total amount of
organic acids. The process of dehydrogenation of cyclohexanol (which was
obtained by oxidation of cyclohexane) was studied on a continuously
working pilot plant (Fig. 4) (with the assistance of V. V. Bernal) and
was compared with the results obtained from cyclohexanol produced from
phenol (Table 1). On a pilot plant (Fig. 5) the authors worked out a
scheme (Table 2) for separating the products obtained from the oxidation
of cyclohexane. The products obtained corresponded, as to their quality
to the analogous products obtained in the production of caprolactam
from phenol. N. L. Chernozhukov, S. E. Kreyn, K. I. Ivanov, L. V.
Borozin, Yu. E. Denisov, N. M. Emanuel, A. I. Finch, Chreyn, Candidate
of Chemical Sciences, and L. Kh. Freydlin are mentioned in the paper.

Card 1/3   V

Catalytic Oxidation of Cyclohexane With
Compressed Air by the Continuous Method

S/064/60/000/004/001/006
B015/B060

Mention is made, moreover, of experiments of noncatalytic oxidation of
cyclohexane by means of air, carried out at the GIAP (State Scientific
Research and Planning Institute of the Nitrogen Industry) in the years
from 1948 to 1953. There are 2 figures, 4 tables, and 19 references:
14 Soviet, 3 US, 1 French, and 1 British.

Card 3/3

FURMAN, M.S., doktor khim.nauk; GOL'DMAN, A.M., kand.nauk; OLEVSKIY,
V.M., kand.tekhn.nauk; RUCHINSKIY, V.R.; Prinimali uchastiye:
ROZENFEL'D, I.M.; LAVRICHENKO, A.A.; VAYSMAN, I.L.;
ZHITNIKOVA, N.K.

Catalytic oxidation of cyclohexane by air under pressure
by the continuous method. Khim.prom. no.4:265-272
Je '60.   (MIRA 13:8)
        (Cyclohexane) (Oxidation)

LEYBUSH, A.G.; LYUDKOVSKAYA, B.G.; GRUZINTSEVA, A.N.; LIKHACHEVA, A.S.;
YANYKINA, Ye.V.; GOL'DMAN, A.M.

Effect of the thermal treatment of a nickel catalyst on the process
of methane conversion. Khim. prom. no. 2:90-96 F '61. (MIRA 14:4)
(Methane) (Catalysts)

S/064/62/000/004/001/002
B101/B138

AUTHORS: Gol'dman, A. M., Candidate of Chemical Sciences,
             Preobrazhenskiy, V. A., Sedova, S. M., Trubnikova, V. I.,
             Furman, M. S., Doctor of Chemical Sciences

TITLE: Preparation of adipic acid by the nitric acid oxidation of
             the products of cyclohexane oxidation in air

PERIODICAL: Khimicheskaya promyshlennost', no. 4, 1962, 7-11

TEXT: To synthesize adipic acid, experiments were conducted at the GIAP, in
the nitric acid oxidation of: rectified cyclohexanol (I), crude cyclo-
hexanol (II) consisting of 75% cyclohexanol and 25% X-oil (distillation
residue from oxidation of cyclohexane in air), a mixture of 50% cyclo-
hexanol + 50% X-oil (III), and 70% cyclohexanol + 30% X-oil. Reaction was
obtained by adding the starting substance dropwise to 57% HNO$_3$ at 70°C,
ratio HNO$_3$ (100%) : starting substance = 4.5 : 1, pressure 1-7 atm, copper-
vanadium catalyst. Of the nitrous gases forming, NO and NO$_2$ can be
regenerated to HNO$_3$ in the GIAP apparatus at 3.5-7 atm. After adding all
the organic starting substance and completing the first state the mixture

Card 1/3

Preparation of adipic acid ...

was heated to $100^\circ C$ and agitated for 30 mins. Then the product was drained from the vessel, and the adipic acid and lower dicarboxylic acids precipitated at room temperature were filtered off. The more readily soluble lower dicarboxylic acids were removed with distilled H_2O at 40°. The mother liquor was analyzed chromatographically for adipic, glutaric, succinic, propionic, and acetic acids. Results: (1) $C_6H_{11}OH$ synthetized from C_6H_5OH and from C_6H_{12} yielded equal amounts of adipic acid: 1.09 g per g starting substance, but a larger quantity of other dicarboxylic acids was formed with C_6H_{12}. (2) At 3.5 atm (optimum) the adipic acid yield (g adipic acid per g starting substance) was ∽1.12 with I, ∽1.55 with II, ∽1.12 with III. Nitric acid consumption was insignificant: (g HNO_3 per g adipic acid) 0.05 with I, ∽0.87 with II, ∽1.06 with III. (3) Saponification of the esters in the X-oil with 10% NaOH ($150^\circ C$, 55 atm, 30 min) resulted in additional quantities of cyclohexanol and cyclohexanone, the oxidation of which increased the adipic acid total yield (by 0.149 g per g saponified X-oil (total adipic acid yield 0.71 g per g X-oil). The resultant high consumption of HNO_3 is explained by incomplete separation of the hydrocarbon solution and the alkali. The adipic acid obtained from

Card 2/3

Preparation of adipic acid ...

S/064/62/000/001/002
B101/B118

X-oil is yellowish to brownish, but can be purified by recrystallization or with activated carbon. (4) Adipic acid has been produced in an experimental plant by oxidation of II since March 1960, and the methods had been found technically satisfactory. There are 4 figures and 2 tables. The most important English-language references read as follows: Chem. Week, 79, 71 (1956); I. Kamlet, US Patent 2844626, 1958.

Card 3/3

GOL'DMAN, A.M., kand.khimicheskikh nauk; ZAYTSEV, A.I.; KOSTYLEV, G.I.;
LAKIMANCHUK, L.S.; LUBYANITSKIY, I.Ya., kand.khimicheskikh nauk;
PREOBRAZHENSKIY, V.A.; FURMAN, M.S., doktor khimicheukikh nauk;
Prinimali uchastiyo: ZHADIN, B.V.; VESEL'CHAKOVA, T.L.; SEDOVA, S.M.;
TRUBNIKOVA, V.I.; KUFIN, M.I.; ZHUKOVA, Ye.I.

Preparation of adipic acid in a continuous pilot unit.
Khim.prom. no.5:323-327 My '62.   (MIRA 15:7)
                    (Adipic acid)

ACCESSION NR: AT4033531   S/0000/63/000/000/0017/0050

AUTHOR: Gol'dman, A. M. (Candidate of chemical sciences); Kostyrlav, G. I.;
Lubyanitskiy, I. Ya. (Candidate of chemical sciences); Minati, R. V.;
Preobrazhenskiy, V. A.; Sedova, S. M.; Trubnikova, V. I.; Furman, M. S.
(Doctor of chemical sciences)

TITLE: Derivation of adipic acid by nitric acid oxidation of the products of
air oxidation of cyclohexane

SOURCE: Poluprodukty* dlya sinteza poliamidov (Intermediates for polyamide
synthesis). Moscow, Goskhimizdat, 1963, 17-50

TOPIC TAGS: adipic acid, cyclohexanol, cyclohexane, phenol, nitric acid, cy-
clohexane air oxidation, cyclohexanol air oxidation, cyclohexanol nitric acid
oxidation, adipic acid derivation, phenol hydrogen reduction, nitric acid
oxidation catalyst, adipic acid plant, bulk reactor

ABSTRACT: This extensive report reviews existing literature on adipic acid
and its derivation, considers in detail the theory and mechanism of cyclohexanol
oxidation with nitric acid (chemical equations are included) and reports the
effect of various catalysts on the efficiency of the process.

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ACCESSION NR: AT4033531

Experimental studies of the process (equipment illustrated) were carried out at
1, 3.5 and 7 atm, 1st stage temperature 70C, 2nd stage 100C, nitric acid
concentration 57% by weight, weight ratio of (100%) nitric acid to organic
raw material 4.5:1. Results are tabulated (see table 1 in the Enclosure).
Special experiments concerned X-oil residue and its oxidation with nitric acid.
Analysis of the derived adipic acid showed that double recrystallization (water)
and activated carbon purification of the latter provides material satisfying all
government specifications relating to production of the so-called "AG" salt
(a polycondensate of adipic acid and hexamethylenediamine). Experimental con-
tinuous production equipment capable of producing 100 kg of adipic acid per day
was assembled and used in a series of experiments to study design requirements
and optimal process factors for industrial production. The experiments in-
volved cyclohexanol derived from hydrogen reduction of phenol and atmospheric air
oxidation of cyclohexane. First stage temperature was 55 to 70C (60 to 65C
for phenol-derived material), second stage and blow-off column was at 100C,
nitric acid concentration 57% by weight, weight ratio as above was 4 to 4.5:1.
It is concluded that bulk type reactors are suitable for continuous nitric acid
oxidation at atmospheric pressure. Maximal yield of adipic acid from phenol-
derived cyclohexanol in the presence of a catalyst was 1.25 kg per 1 kg of raw
material. "The method of dispersion chromatography on diatomaceous brick was
Card 2/4

ACCESSION NR: AT4033531

developed by G. T. Levchenko, I. G. Solov'yeva and I. G. Malkova of GIAP. V. R.
Ruchinskiy of GIAP also took part in the work." Orig. art. has: 11 tables, 6
graphs, 7 illustrations and 14 chemical formulas.

ASSOCIATION: None

SUBMITTED: 12Oct63   DATE ACQ: 06Apr64   ENCL: 01

SUB CODE: OC   NO REF SOV: 019   OTHER: 012

3/4

Card

ACCESSION NR: AT4033531 ENCLOSURE: 01

Table 1

Oxidation of cyclohexanol at atmospheric pressure (catalyst in % of the weight of organic raw material 0.7 Cu, 0.2 NH_4VO_3)

Organic raw material	Composition of reaction gases, vol. %					Yield of dicarboxylic acid, g/g of organic raw materials			Nitric acid consumption, g/g of adipic acid
	$NO_2+N_2O_4$	NO	N_2O	N_2	CO_2	adipic acid	glutaric acid	succinic acid	
Cyclohexanol									
from phenol	2,6	23,7	41,2	20,8	6,7	1,29	0,035	0,028	0,65
from cyclohexane	9,5	16,4	38,0	32,9	3,1	1,29	0,110	0,080	

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GOL'DMAN, A. N.

"Treatment for Hypertonia by Paraffin Applications," Sov. med., No.2, 1949

Clinical Dept., Central Sci. Res. Inst. Physical Therapy im. Sechenov

SOV/120-5 -4-47/50

AUTHORS: Goldobin, A. N., Lezheyko, L. V.

TITLE: A Device for Electrolytic Sharpening of Point Probes with
Control of the Quality of the Point

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 4, pp 156-157
(USSR)

ABSTRACT: The authors describe a variant of the electrolytic method
of sharpening point probes. A device is used which sharpens
a probe by periodic immersion of the latter into an electro-
lyte and removal of the probe from the electrolyte at a con-
trolled rate. This rate depends on the diameter of the orig-
inal rod or wire and the rate of dissolution of the probe mat-
erial by the electrolyte. The device makes it possible to
produce rapidly point probes with the quality of the point
controlled continuously by means of a binocular magnifier
or a binocular microscope MBS. Alternatively, the point
may be projected on a screen and its quality judged from its
magnified image. The device is shown schematically in Fig 1,
and its photograph is given in Fig 2 (numbering of details in
both figures is the same). Five support rods are fixed to an
ebonite base 1 . Four of the support rods (2 and 3)
are used to mount the main part of the device and one such
rod 4 carries a small lamp 13 . A d.c. motor 6 with

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507/120-59-4-47/50

A Device for Electrolytic Sharpening of Point Probes with Control of the Quality of the Point

a worm reductor 7 rotates a crankshaft mechanism 12. The crankshaft and a small roller 11 convert the rotation of the motor shaft into a vertical up-and-down motion of a rod 9 which carries a clamp 13 to hold the probe. The electrolyte is placed in a beaker 22 on a moveable table 21. The motor is supplied through a potentiometer (or a rheostat), which is used to alter the rate of rotation of the motor shaft and thus the rate of the up-and-down motion of the probe. D.c. current is supplied through terminals (15 in Fig 2) to the electrolyte and the probe; this current is also controlled by means of a potentiometer. A binocular magnifier 17 or a microscope has its own stand separate from the device itself. When wires of 0.5 mm diameter and thinner have to be sharpened into probes, the rate of up-and-down motion produced by the motor may be too small; for this purpose the device can be used without the reductor 7 and the motor 6 - the crankshaft is then rotated manually by means of a knob 20. The following parameters can be varied in this device: (a) the electrolyte composition and density, (b) the current density through the electrolyte

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S/171 0-59-4-4/30

A Device for Electrolytic Sharpening of Point Probes with Control of the Quality of the Point

and the probe, (c) the rate of immersion of the probe into the electrolyte and the rate of its removal from the electrolyte. The rates of immersion and removal determine the duration of action of the electrolyte on various parts of the probe point. The device can be used to produce uniform symmetrical cone-shaped probes of any metal and to improve the quality of probes already sharpened or to reduce the probe dimensions. There are 2 figures and 3 references, 2 of which are English and 1 German.

ASSOCIATION: Institut poluprovodnikov AN SSSR (Institute for Semi-conductors, Academy of Sciences, USSR)

SUBMITTED: July 14, 1958.

Card 3/3

GOL'DMAN, A.M.; YUDIN, A.I.

Cardiac electrohymography in hypertension and its changes
during health resort and climatic treatment. Vest. rent. i
rad. A no.5:24-19 S-O '56.   (MIRA 18:12)

1. Terapevticheskaya klinika (zav. - prof. ... Tatevosov) i
rentgen. tekhno otdeleniya (zav. - kand. ... i nauk I.I. Yakovlev)
Instituta meditsinskoy klimatologii i klimatot rapii imeni
I.M. Sechenova, Yalta.

GOL'DMAN, B.M.

Role of bronchoscopy in determining indications for surgery in
pulmonary tuberculosis. Vrach.delo no.7:743 Jl'58   (MIRA 11:9)

1. Otdeleniye khirurgii legochnogo tuberkulera Odesskoy oblastnoy
klinicheskoy bol'nitsy.
            (BRONCHOSCOPY)
            (TUBERCULOSIS)

PROCESSES AND PROPERTIES INDEX

11-I

Biochemistry of oögenesis. W. Niemierko and C. Goldman (Nencki Inst. Exptl. Biol. Lodz). *Acta Biol. Exptl.* (Warsaw) 14, 59–67(1947). —During the growth of eggs of hens 5 periods can be distinguished. The first ends when the wt. of the egg cell exceeds 100 mg., during the 2nd period the wt. increases to 1 g.; the 3rd period ends when the egg attains its final size. During the first period the proteins are the chief constituents of the egg cell (50–58% of the dry substances), there is a proportional increase in the proteins and fats, and the water content is the greatest (85–80%). The ratio of proteins to fats is 3:1, and the cholesterol content of fats is 8–11%. The transition of the oocytes from the first to the second period is accompanied by great changes in their chem. compn.: there is a large increase in the dry substances, and the ratio of fats to proteins shifts in favor of the fats. During the 3rd period the compn. of the cell remains essentially unchanged since all components increase in proportional amts. The fats are the principal constituents of the egg during the 3rd period (60% of the dry substances), the dry substances increase to 40–50% of the wt. of the egg, the ratio of fats to proteins is 2:1, and the cholesterol content of fats is 5%.

H. H. Szmant

A.S.B.-S.L.A.   METALLURGICAL LITERATURE CLASSIFICATION

GOLDMAN, D.

Problem demanding quick solution. Prom.koop. no.8:21 Ag '52.
(MIRA 10:4)
1. Starshiy bukhgalter arteli inva idov "Pobeda," Dnepropetrovsk.
(Housing)

GOI'DMAN E.

Determination of the quality of blood supplied for drilling. E. Gol'dman (Meat Combine, Moscow). *Myasnaya Ind. S.S.S.R.* 27, No. 2, 14-15(1956).—Sp. gravity, viscosity, and dry residue (I) were detd. to check the quality of the cattle blood used for the prepn. of serum albumin (II). The sp. gravity of the blood (1.049-1.059) is directly related to its I (15.34-20.85%). In a good quality blood the amt. of II should not be below 15%.   E. Wierbicki

DOGADKIN, B.; PECHKOVSKAYA, K.· GOL'DMAN, E.

Structure and properties of filled rubber mixtures. Part 16: Mixtures from butadiene-Na rubber with colloidal silica. Kauch. i rez. 16 no.8: 1-5 Ag '57.   (MIRA 10:11)

1. Nauchno-issledovatel   promyshlennosti.
              (Rubber, Synthetic   )

GOL'DMAN, E. E.

YASHUNSKAYA, A.I., kandidat tekhnicheskikh nauk; GOL'DMAN, E.E.

"White soot." Priroda 46 no.6:78-80 Je '57.   (MIRA 10:7)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Moskva)
(Silica)

GOL'DMAN, E. E.

AUTHORS: Pechkovskaya, K. A., Gol'man, E. I, Dogadkin, B. A.

TITLE: Structure and Properties of Rubber Mixtures Containing Fillers. (Struktura i svoystva napolnennykh rezinovykh smesey). Part 17. Properties of Colloidal Silicic Acid, Defining its Strengthening Effect. (Soobshcheniye XVII. Svoystva kolloidnoy kremnislotly, opredelya-yushchiye eye usilivayushchiy effekt.)

PERIODICAL: Kauchuk i Rezina, 195?, Nr.?, pp. 16 - 17. (USSR).

ABSTRACT: A detailed investigation of samples of colloidal silicic acid of varying activity was carried out. Electron-microscopic investigations were made to determine the degree of dispersion. Figs. 1 and 2 show micro-photo-graphs of active (strengthening the rubber) and inactive (having only a slight strengthening effect on the rubber) samples; the size of the particles was approximately 1?0 - ?00 ? . The optical density of aqueous suspensions was determined, and it was found that the light absorp-tion in suspensions containing active silicic acid, equal weight concentration, was twice as large as the light absorption in suspensions containing the inactive sample (Table 1). The dispersion of active and inactive modi-fications of colloidal silicic acid in ?? - butadiene rubber was evaluated by microscopic analysis.

Card 1/3

62B-2-3/8

Structure and Properties of Rubber Mixtures Containing Fillers. Part
17. Properties of Colloidal Silicic Acid, Defining its Strengthening
Effect.

and by adding colouring agents. Figs. 3 and 4: micro-
photographs of rubber mixtures containing inactive/
active silicic acid. Surface properties of the filler
are determined by the nature of the filler itself, and
by the by-products adsorbed on the surface of the par-
ticles. It was, therefore, necessary to determine to
what degree the activity of the colloidal silicic acid
and of the filler depends on the adsorbed substances.
Such admixtures are electrolytes which were separated
by high voltage dialysis. Results of this purification
are given in Table 9; they show that the separation of
adsorbed admixtures with active colloidal silicic acid
do not lead to denactivation. The electrical properties
of the samples of colloidal silicic acid, with a varying
degree of activity, were determined by electrophoresis
on an apparatus designed by S. Rabinovich and I. P.
...   The experiments were carried out on suspen-
sions of silicic acid in an aqueous solution of glycerine,
the concentration = 2.4 g/l. Some admixtures can be
separated at increased temperatures, e.g. the samples of
active colloidal silicic acid were heated in a muffle

Card 2/3

20-119-6-33/56

AUTHORS: Dogadkin, B., Pechkovskaya, K., Gol'dman, E.

TITLE: On the Structure and the Reinforcing Action of Colloidal
              Silicic Acid as Filler of Synthetic Rubber (O strukture i
              usilivayushchem deystvii kolloidnoy kremnekisloty kak napol-
              nitelya sinteticheskogo kauchuka)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 119, Nr 6,
              pp. 117o - 1173 (USSR)

ABSTRACT: This work investigates the character of the distribution of
              the colloidal silicic acid as representative of a new glass of
              intensifiers in sodium-butadiene rubber. This test object also
              was chosen for the following reason: Of the same raw material and
              also by the same method, only varying of the conditions of the
              technological process, samples of colloidal silicic acid with
              essentially different reinforcing effect can be produced. From
              this the possibility of the comparison of active and inactive
              fillers results. For the performance of these experiments a
Card 1/3   series of samples of colloidal silicic acid with high, mean, and low

On the Structure and the Reinforcing Action of   2o-119-6-33/56
Colloidal Silicic Acid as Filler of Synthetic Rubber

reinforcing action in rubber sorts of sodium-butadiene rubber
was produced. The chemical composition of these samples prac-
tically was equal and they also differed only very little with
regard to the specific surface, pH, and various adsorption
characteristics. But the rubber mixtures produced on the base
of sodium-butadiene rubber, which contain the samples mentioned
have an essentially different structure of the mixture and also
essentially different physical-mechanical properties of the
vulcanisates. The degree of the structuring of the filler in
the mixture is characterized by the lixivation coefficient which
is determined by the share of the filler, which passes over
into the basic solution, in its total content in the mixture.
A diagram illustrates the dependence of the lixivation coefficient
on the rate of filling for samples of colloidal silicic acid
of the highest or lowest reinforcement coefficient resp. (active
resp. inactive samples). The most active silicic acid is
leached out much easier than the inactive one. The higher the
lixivation coefficient is for a given system the stronger

Card 2/3   marked are also the strength properties of the vulcanisate.

On the Structure and the Reinforcing Action of   2o-119-6-33/56
Colloidal Silicic Acid as Filler of Synthetic Rubber

> The activity of the colloidal silicic acid can be decreased
> considerably by heating at 6oo^{o}C. There are 4 figures, 3
> tables, and 7 references, 3 of which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti
                (Scientific Research Institute of Tire Industry)

PRESENTED: December 25, 1957, by P. A. Rebinder, Member, Academy of
                Sciences, USSR

SUBMITTED: December 12, 1957

Card 3/3

S/138/61/000/004/005/006
A051/A129

AUTHORS: Pechkovskaya, K A., Orlovskiy, P.N., Gol'dman, E.I.

TITLE: The classification of carbon blacks for the production of
              rubber

PERIODICAL: Kauchuk i rezina, no. 4, 1961, 47-48

TEXT: Prior to the Second World War two types of carbon black were
manufactured in the Soviet Union: channel gaseous and lamp carbon black.
By 1956 six different types were produced, viz. furnace, jet burner,
thermal and anthracene carbon black. In connection with the forthcoming
revision of the ГОСТ - GOST 7885-56, the introduction of a new, stricter
classification of the carbon blacks is being considered. In the recommend-
ed classification the name of the carbon blacks takes into account the
use of the raw material. A number is added to the letter designation if
more than one type of carbon black is produced by one method from the
same raw material. The first letter designates the method of the carbon
black production K - (K), for channel, П (P) for furnace, and T (T) for
thermal. The second letter is associated with the type of the raw
Card 1/4

The classification of

S/138/6?/001/005/006
A051/a115

material used Г - (G) - for gaseous М - (M) - for carbon blacks produced from liquid raw material, А - (A) - acetylene, МН - (Mn) - methane. If a mixed raw material is used, then the designation includes the letters ГМ - (GM) or МГ - (MG), depending which of the two is the most important raw material. The table shows all the types of carbon blacks manufactured in the USSR, as well as all the new types intended for future production. ПМ -70 (PM) (furnace carbon black made from liquid raw material, with a specific surface of 70 m^2/g) is an example of a carbon black produced after 1956 and thus not included in the GOST 7885-56. There is 1 table.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tire Industry).

Card 2/ 4

S/081/61/000/023/154-061
B106/B101

AUTHORS: Pechkovskaya, K. A., Gol'dman, E. I., Shelld-Khuzomi, N. A.,
             Orlovskiy, P. N., Kupriyanova, V. L., Simanovskaya, S. A.

TITLE: Methods for determining the specific surface area of semi-
             reinforcing and reinforcing blacks for the technical control
             of black production

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 23, 1961, 560, abstract
             23P348. (Tr. N.-i. in-ta shin. prom-sti, sb. 6, 1960, 81-94)

TEXT: A description is given of three methods for determining the
specific surface area of semireinforcing and reinforcing blacks. The
specific adsorption surface is obtained by the method of adsorption of I_2,
the geometrical specific surface by the calorimetric method, and the
method of Deryagin provides a specific surface close to the adsorption
specific surface. All of the three methods furnish conditional values
for the specific surface, are simple, and can be used for the first
technical control of the dispersity of blacks in industrial laboratories.
[Abstracter's note Complete translation.]
Card 1/1

GOLDMAN, E. I.

Ed. 1500 copies print.

Tech. Ed.: Yu. S. Bel'chikova.

Information on the toxic effects of rare ...

Experimental Studies
Industrial Dust of ... Containing Rare
and Other Metals and their Compounds.   199
Industrial dust from ore concentrates. O. ...
Tarakova   209
Industrial dusts at powder-metallurgy plants (hard
alloys). S. S. Kaplun (Deceased) and N. V. Mezentseva   227
Dust of metallurgical (Bessemer) slags. I. V. Roshchin   238
Industrial dust from copper ores. Kim Hai-in   245
Industrial dust from luminophores. E. I. Gol'dman et al   249

GOL'DMAN, E.I., sanitarnyy vrach

Occupational hygiene in the flourescent lamp industry. Gig. i san.
21 no.6:33-40 Je '56.   (MLRA 9:8)

1. Iz Sanitarno-epidemiologicheskoy stantsii Stalinskogo rayona
Moskvy.
         (INDUSTRIAL HYGIENE,
              in luminescent lamp prod. (Rus))

GOL'DMAN, E.I. (Moskva)

Effect of low concentrations of mercury vapor and measures for controlling them in the manufacture of fluorescent lamps. Gig. truda i prof.zab. 3 no.6:11-16 N-D '59.   (MIRA 13:4)

1. Sanitarno-epidemiologicheskaya stantsiya Stalinskogo rayona.
(MERCURY--PHYSIOLOGICAL EFFECT)

GOL'DMAN, E. I., Cand Med Sci -- (diss) "Problems of industrial hygiene in the manufacture of luminophores and luminiscent lamps." Mos, 1958. 14 pp (1st Mos Order of Lenin Med Inst im I. M. Sechenov), 200 copies (KL, 18-58, 102)

-104-

S/194/61/000/006/030/077
D201/D302

AUTHOR: Gol'dman, E.I

TITLE: Problems of labor hygiene in the manufacture of
            semi-conductor devices

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika,
            no. 6, 1961, 3, abstract 6 D15 (Gigiyena truda i
            prof. zabolevaniya, 1960, no. 10, 30-35 (English
            summary))

TEXT: The problems of labor hygiene were investigated in the
manufacture of HF germanium and silicone diodes and triodes   It
was established that in the section producing monocrystals of semi-
conducto materials, the worker is subjected to high air tempera-
ture (up to 45°C), to the air content of hydrogen compounds of mat-
erials produced and to electromagnetic fields with the electric
field intensities > 100 V/m and magnetic field intensities > 25
A/m, due to the presence of non-screened inductive coils and faci-

Card 1/3

Problems of labor hygiene...

S/194/61/000/0 0/036/077
D201/D302

ere In the process of obtaining Ge and of alloyed As, AsH_3 has been found in the region of zone refining in concentrations reaching 0.003 milligram per liter near the exhaust and 0.001 milligram per liter in the operator's stand. The content of SbH_3 at the operator's stand near the growing oven of Sb-doped monocrystals was found to be 0.00015 ± 0.00045 mg/l after opening the oven. During the cleaning of internal standing oven surfaces from Ge or Si deposits, which is carried out manually with emery paper, the concentration of dust in the working section varies between 15 and 67.6 mg/m^3 with Ge content in air reaching 7 mg/m^3. During cleaning of stoves, with Sb introduced into the alloy, its content in air reaches ~ 0.03 mg/m^3. During dry cutting the bars obtained, the dust content reaches 6 mg/m^3. During the dissolution process of piccin in hot solvent, the contamination of air by vapors of trichloroethylene is ~ 0.06 mg/l and by vapors of toluene ~ 0.035 mg/l. In the section of crystal etching, some contamination of air has been detected by HF and HNO$_3$ vapors. In sections of diffusion

Card 2/3

Problems of labor hygiene...

S/194/61/000/000/036/077
D201/D302

tempering the main harmful factor is the high air temperature (up
to 40°C), together with possible formation of hetro... metal com-
pound. In the process of covering transitions y compound, the
evaporation of solvents often takes place, simultaneously with that
of the compound itself. There are many operations in the semicon-
ductor device manufacture which require considerable eye-sight
stressing. The illumination of operating stands was found to vary
between 500 and 1000 lux, while according to standards it should
have been 750-3000 lux. In the measurement sections using special
installations, SHF fields may be formed owing to poor screening.
In addition, the operators may be subjected to soft X-ray radiation
The evidence obtained is used to formulate requirements on sanitary
and health protecting measures. /Abstracter's note: Complete tran-
slation.7

Card 3/3

GOL'DMAN, E.I.

Hygienic evaluation of the production of celluloid products as
a source of atmospheric contaimination. Gig. i san. 25
no. 6:97 Je '60.   (MIRA 14:2)

1. Iz sanitarno-epidemiologicheskoy stantsii Stalinskogo
rayona Moskvy.
              (CELLULOID)   (AIR—POLLUTION)

GOL'DMAN, E.I.

Evaluation of industrial injury to workers of the electron vacuum
tube industry. Zdrav. Ros. Feder. 5 no.12:18-22 D '61.

(MIRA 15:1)

1. Iz sanitarno-epidemiologicheskoy stantsii Pervomayskogo rayona
Moskvyy (glavnyy vrach B.M.Oslon).
        (ELECTRON TUBES)   (INDUSTRIAL ACCIDENTS)

PECHKOVSKAYA, K.A.;   ORLOVSKIY, P.N.;   GOL'DMAN, E.I.

   Classification of carbon blacks for rubber manufacture. Kauch.
   i rez. 20 no. 4:47-48 Ap '61.   (MIRA 14:5)

   1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.
            (Carbon black)   (Rubber)

GOL'DMAN, A.I., kand.med.nauk

Methods for determining nitrogen oxides in the air. Gig. i san.
26 no.2:53-54 F '61.   (MIRA 14:10)

1. Iz sanitarno-epidemiologicheskoy stantsii Stalinskogo rayona
Moskvy.
         (NITROGEN OXIDE)   (AIR—POLLUTION)

GOL'DMAN, E.I., kand.med.nauk

Noise characteristics of some machines in the lumbering industry
and their hygienic evaluation. Trudy TSNIIME no.32:47-74 '62.
(MIRA 15:5)
(Lumbering--Machinery) (Noise)

MAYOROV, Yu., general-mayor; VAZHENTSEV, I., polkovnik; GAVRILENKO, I., polkovnik; GOL'DMAN, G., polkovnik; MEL'NIKOV, A., polkovnik

Creatively study scientific communism. Komm. Vooruzh. Sil
46 no.19:58-61 O '65.   (MIRA 18:12)

KOVAL'CHUK, L.M., inzh., GOL'DMAN, I.A., inzh.

Using induction heating for gluing tenon joints of windows.
Der.prom. 9 no.6:13-15 Je '60.   (MIRA 13:8)
          (Windows)   (Gluing)

GOL'DMAN, I.I.

Lymphangioma of the nasal cavity. Vest.oto-rin. 19 no.4:94 Jl-Ag '57.
(MIRA 10:11)

1. Iz Luninetskoy zheleznodorozhnoy bol'nitsy, Belorusskoy zheleznoy
dorogi.
(NOSE--TUMORS)

GOL'DMAN, I.I.

Some features of the status of the ear, nose and throat in influenza.
Vop.otorin. 21 no.6:83-85 N-D '59.   (MIRA 13:4)

1. Iz kafedry bolezney ukha, gorla i nosa (zaveduyushchiy - prof.
A.G. Likhachev) I Moskovskogo ordena Lenina meditsinskogo instituta
imeni I.M. Sechenova.
          (INFLUENZA, pathology)
          (EAR, pathology)
          (NOSE, pathology)
          (THROAT, pathology)

Jun. 1946

USSR/Petroleum - Well Drilling
        Drilling Machinery

"The Production of Drilling Equipment in the Plant
imeni Vorovskiy," I. I. Gol'dman, 2½ pp

"Razvedka Nedr" No 3

Description of various machines for drilling wells
produced by the Vorovskiy plant. Description very
general, giving main characteristics of the machin-
ery and the purposes for which it is to be used.

27T86

ID

GOLDMAN, I.

Oscillations of a degenerate electron gas obeying a Fermi
distribution law   I. I. Gol'dman (Moscow State Univ.).
J. Exptl. Theoret. Phys (U.S.S.R.) 17, 681 5(1947)(in
- Russian).   Math. soln. of the time dependence of d
perturbations.   N. Thon

ASB SEA   METALLURGICAL LITERATURE CLASSIFICATION
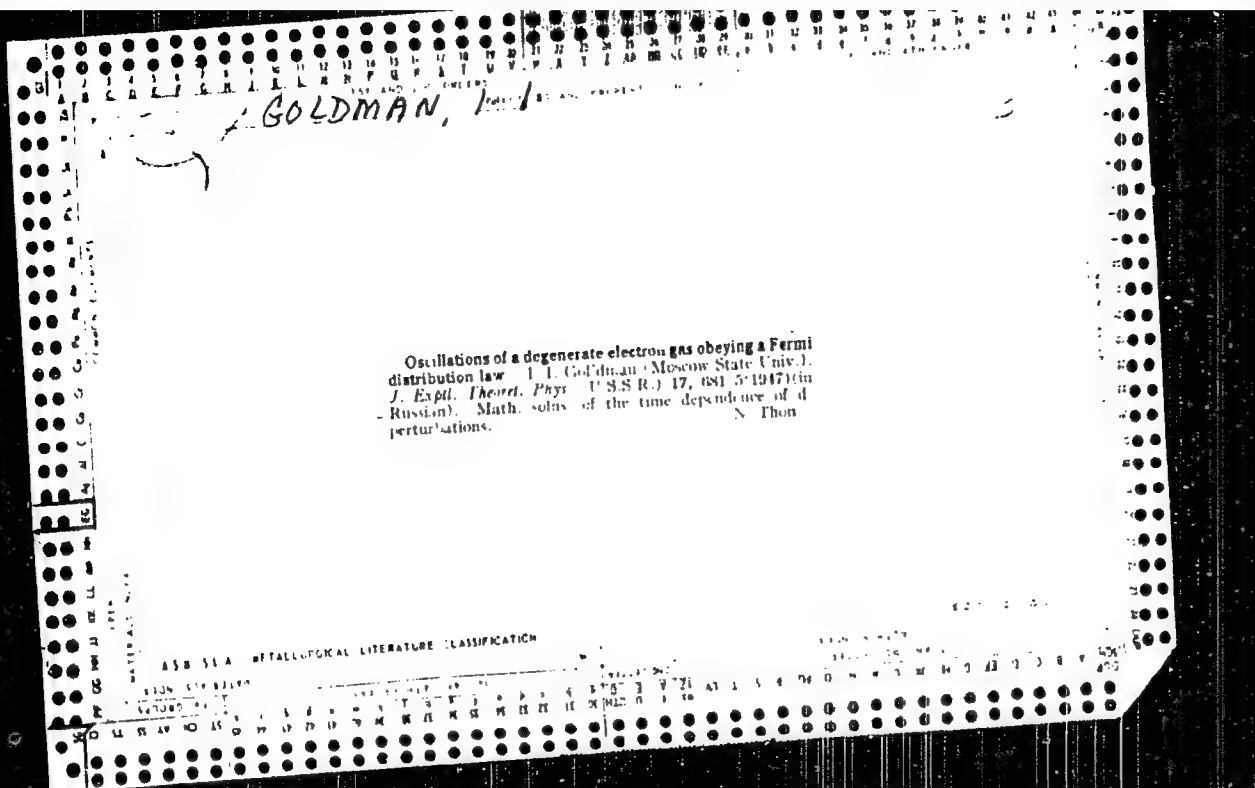
DEAN, I. I.   Cand. Chem. Sci.

Dissertation: "On the kinetics of the Reactions which occur during the hydrolysis or alcoholysis of solutions of acetic anhydride." Moscow Order of Lenin State U Imeni M. V. Lomonosov, 26 Feb 47.

SO: Vechernyaya Moskva, Feb, 1947 (Project #17836)

..........., I. I.

USSR/Nuclear Physics - Atomic spectra

Card 1/1   : Pub. 146-5/18   FD-488

Author   : Goldman, I. I.

Title   : Theory of isotopic shift of spectral lines

Periodical   : Zhur. eksp. i teor. fiz., 24, 177-189, Feb 1953

Abstract   : Discusses isotopic shift in atomic spectra due to difference in masses
                    and dimensions if nuclei of isotopes. Shows that the consideration of
                    interaction of the optical electron and the deep electrons of the atoms
                    eliminates the discrepancy between theory and experiments, particularly
                    evident in the middle elements of the periodic table. Experimental data
                    obtained on Cu, Zn, Rb, Ag and Ba facilitated analysis of behavior of
                    changes of nuclear radiuses of isotopes of these elements and the evalua-
                    tion of interaction of electron and nucleon. Indebted to Prof. A. B.
                    Migdal.

Institution   : Physics Institute, Acad Sci Armenian SSR

Submitted   : September 14, 1952

GOL'DMAN, I. I.

PA 249T19

USSR/Nuclear Physics - Quadrupole   11 Jan 53
                      Moments

"Spectroscopic Determination of Quadrupole Moments
of Nuclei," I. I. Gol'dman, Phys Inst, Acad Sci,
Armenian SSR

DAN SSSR, Vol 88, No 2, pp 241-244

Calculates the effect of screening (that is, defor-
mation of the electrons belonging to the internal
shells by the optical electrons) by finding the
potential V of an inhomogeneous field created by
an optical electron in the region of the nucleus,
taking into account the deformation of the internal

249T19

shells by this electron. Acknowledges guidance of
Prof A. B. Migdal and advice of Acad L. D. Landau.
Presented by Acad A. I. Alikhanov 18 Nov 52.

249T19

GOLDMAN, I. I. AND AMBGA., I. A.

Pol rization of Radiation and Relativistic electron. in otion in Magnetic Fields of
Nebulae and Stars
Izv. All ArmSSR. ser. fiz. -mat., yestestv. i tekhn. n., 7, No 2, 1954, pp 31-42

The polarization of light of stars and nebulae is tentatively explained on basis of
analysis of radiation emitted by relativistic electrons on circular orbits in magnetic
fields. Formulas expressing polarization f electron radiation and the degree of
polarization are found. Numerical examples for particular cases are given. The pol-
arization degree shows a maximum at a 90° inclination of the magnetic moment of the
star to the line of sight and vanishes at 0°. (RZhAstr, No 5, 1955)

SO: Sum. No. 639, 2 Sep 55

USSR/Physics - Cosmic rays, mesons   FD-1356

Card 1 1   Pu. 146-1 1
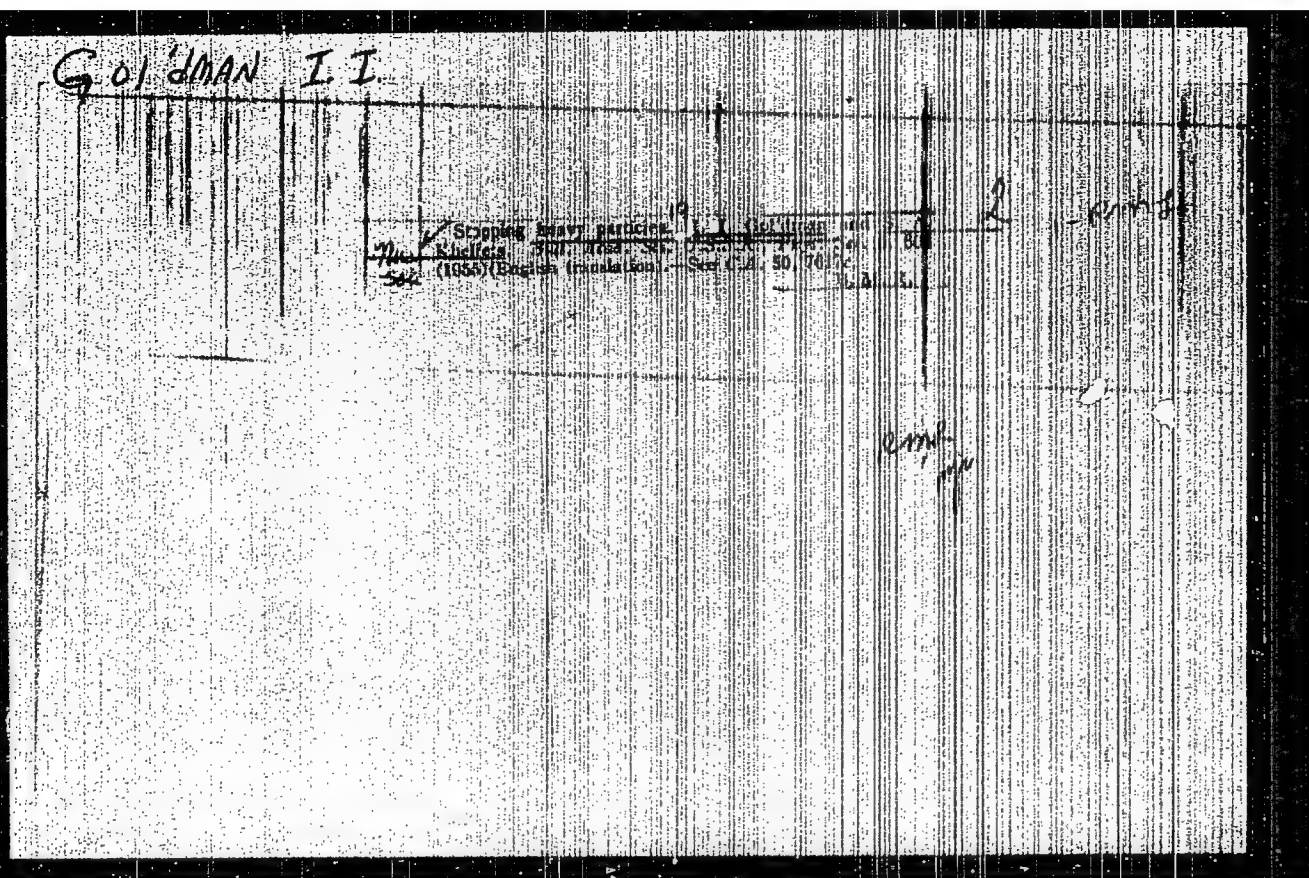
Author   Garibyan, G. M., and Gol'dman, I. I.

Title   Spectra of pi and mu mesons in cosmic rays

Periodical   Zhur. eksp. i teor. fiz., 26, pp 257-262, Mar 1954

Abstract   The authors analyze the spectra of mu-mesons, on the basis of which
                     they consider the spectra of generation and the atmospheric spectra
                     of pi-mesons; i.e. they treat the problem of the connection between
                     pi and mu mesons. The intensity and energy spectra of pi-mesons are
                     obtained. The authors thank Prof. A. I. Alikhanyan, who posed the
                     problem, and Academicians A. I. Alikhanov and L. D. Landau and Prof.
                     A. B Migdal, I Ya. Pomeranchu. and Ye. L Feynberg, who clarified
                     some difficult points.

Institution   Physics Institute, Acad. Sci Armenian SSR

Submitted   August 14, 1953

Gol'dMAN II.

Stopping heavy particles in a gas solution.
Khelicis. Zhur. tekh. fiz.
(1955)(English translation).   Sci. Cul. 50 (70).

GOL'DMAN, I.I.; KHEYFETS, S.A.

On the stopping of heavy particles. Izv.AN SSSR Ser.fiz.19 no.6:
665 N-D '55.   (MLRA 9:4)

1.Fizicheskiy institut Akademii nauk Arm.SSR.
          (Cosmic rays) (Nuclear physics)

GOLDMAN, II

USSR

6757. Theory of scattering in a quasi-classical approximation. I. I. GOLDMAN AND A. B. MIGDAL. *Zh. eksper. teor. Fiz.* 28, No. 4, 394–400 (1955) in Russian.

The wave-function is represented as $\psi = \psi_0 + i\psi_1$ where ψ_0 is the semi-classical (W.K.B.-like) function $\sum_\lambda A_\lambda e^{iS_\lambda}$. The equation on ψ_1 is then $\Delta\psi_1 + k^2(r)\psi_1 = -\sum_\lambda \Delta A_\lambda e^{iS_\lambda}$. Approximate solutions are found for using a semi-classical Green function.   O. B. BROWN

GOLLDMAN, ~~~~~~~~ KRIVCHENKOV, Vladimir Dmitriyevich; GETLIKHAN, B.T.,
professor, redaktor; ZHABOTINSKIY, Ye.Ye., redaktor; GAVRILOV, M.S.,
tekhnicheskiy redaktor

[Collection of problems in quantum mechanics] Sbornik zadach po
kvantovoi mekhanike. Pod red. B.T.Gellikmana. Moskva, Gos.izd-vo
tekhniko-teoret. lit-ry, 1957. 275 p.   (MIRA 10:12)
    (Quantum theory--Problems, exercises, etc.)

AUTHOR   Gol'man, I. I.

TITLE·   The Polarization of Muons in Cosm. Rays 'Polarizatsiya
              i-mezonov v Kosmicheskikh luchakh)

PERIODICAL·   Zhurn. eksp·(im-rrim noy i teoret. khsik, Moskn,   1958
              Vol. 34, Nr 4, pp.   (USSR)

ABSTRACT·   The recently discovered non-conservation of parity in weak
              interactions leads above all to the asymmetry of the decay
              of polarized myons. The amount of asymmetry is in this case
              directly proportional to the degree of polarization. Accord-
              ing to Lederman et al. (Ref) the myons formed after the
              slowing down of the pions are probably polarized almost
              completely in the direction of their motion. In the
              following calculation it is assumed that polarization in a
              single decay act is complete. From this, of course it does
              not follow at all that the myons in the cosmic rays are
              completely polarized. For the purpose of calculating the
              degree of polarization the authors investigate a myon with
Card /3   the mass M, p and the energy E, which has formed by the de-

APPROVED FOR RELEASE: 09/24/2001   CIA-RDP86-00513R000515710005-7"

The Polarization of M... ... Com... Phys.   ...

...ay of a given (p... E ... The polarization of the myes ... ...
... ... the angle ... with ... momentum. An expression for
the mean value of the polarization is derived and written
down. The polarization of the myons formed in the decay
K... ... ... almost complete while for the products of
this decay ... ... it amounts to about O... By measuring
the polarization of the cosmic myons in this way the ratio
between the number of K mesons and the pions forming in the
... layers of the atmosphere could be found. Besides, the
positive myons primarily has a higher degree of polarization
than the negative myons. Finally, the author makes some re-
marks on the depolarization of the myons; it is strongest
after the slowing down of the particles and depends on the
chemical properties of the material. This part of the de-
polarization can be best taken into account on the basis
of the existing experimental data by using the symmetry of
the de... ... ... Finally, the author thanks Professor
A. I. A. khanyan for his interesting discussions. There are
... ... are Sovi...

Card 2/2

The Polarization of Myons in Cosmic Rays   56 34-2 44/36

ASSOCIATION: Fizicheskiy Institut Akademii nauk Armyanskiy SSR (Institute
of Physics, AS Armenian SSR

SUBMITTED: January 8, 1958

Card 3/4

20723
S/022/60/013/006/004/005
C 111/ C 333

26.2357

AUTHOR: Gol'dman, I. I.

TITLE: On the theory of the deceleration radiation under
              consideration of multiple dispersion and evaluation
              of the accuracy of the method of Focker-Planck

PERIODICAL: Akademiya nauk Armyanskoy SSR. Izvestiya. Seriya
              fiziko-matematicheskikh nauk, v.13, no.6, 1960, 55-61

TEXT: The author uses the notations from his paper (Ref.4: Tormoznoye
izlucheniya pri vkhode v sredu s uchetom mnogokratnogo rasseyaniya
[Deceleration radiation under penetration into the medium under
consideration of multiple dispersion] "Zh ETF", 39, 203, 1960).

He considers the integral equation

$$\frac{\partial w}{\partial t} + \vec{v}\,\frac{\partial w}{\partial \vec{r}} = \eta \int \sigma\,(\vec{v}-\vec{v}{}')\,\left[w(t,\vec{r},\vec{v}{}') - w(t,\vec{r},\vec{v})\right]d\vec{v}{}' \qquad (1)$$

for the distribution of the electrons without passing to the
Focker-Planck approximation.

After longer transformations the author shows that the calculation
of the deceleration radiation in a medium with
Card 1/4

20723
S/022/60/013/006/004/005

On the theory of the deceleration . . . C 111/ C 333

$$\dot{E}_\omega = \frac{4e^2 \omega \lambda^2}{\pi c} \quad Re \int_0^\infty \chi_1(x)\ g\ (x)\ dx \qquad (38)$$

leads to the solution of the equation

$$\chi'' - \frac{1}{\Delta\lambda}\left[1 - \frac{1}{8s^2}\ V\right]\chi = 0 \qquad (39)$$

with subsequent quadrature. Here it holds

$$g(x) = \frac{1}{32s^2}\ \frac{V}{\sqrt{x}}\ K_1(\sqrt{x}) \qquad (40)$$

and the function V has the behavior:

$$\frac{V}{x} = 1 \text{ for } x \ll \left(\frac{\Delta}{b}\right)^2$$

Card 2/4

20723

On the theory of the deceleration . . . C 111/ C 333

S/022/60/013/006/004/005

$$\frac{V}{x} = \frac{\ln 1.85 \lambda/\sqrt{x}a}{\ln b/a} \quad \text{for} \quad \left(\frac{\lambda}{b}\right)^2 \ll x \lessgtr \left(\frac{\lambda}{a}\right)^2.$$

The author considers limit cases. If the parameter s is large, then

$$\chi_1 = \sqrt{x}\, K_1(\sqrt{x}) \tag{42}$$

$$\dot{E}_\omega = \frac{4e^2 n v}{3\lambda^2 c} \ln \lambda/a \tag{45}$$

is obtained which coincides with the formula of Bethe.

Let now be $s \ll 1$. If even $s \ll \left(\frac{\lambda}{b}\right)^2$, then it becomes $V/x = 1$ and

$$\chi_1 = \exp\left(-\frac{1-i}{8s}x\right) \tag{47}$$

$$\dot{E}_\omega = \frac{4e^2 \omega \lambda^2}{\pi c \cdot 8s} = \frac{2e^2 \sqrt{\omega\, q}}{\pi c}, \quad \left(s = \frac{\lambda^2}{4}\sqrt{\frac{\omega}{q}}\right). \tag{48}$$

Card 3/4

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S/022/60/013/006/004/005
On the theory of the deceleration . . . C 111/ C 333

If $\left(\lambda/b\right)^2 \lesssim s \ll 1$, then

$$\chi'' + \frac{i}{32s^2} \frac{V}{x} \chi = 0 \tag{46}$$

must be considered. If one restricts oneself to logarithmic exact-ness, then the value of V/x must be taken for $x \sim 8s$. Here (48) is maintained, where in q it must be put $\ln \lambda \sqrt{s}$ a instead of $\ln b/a$ which confirms the correctness of the interpolation according to Migdal (Ref. 3: Tormoznoye izlucheniye i obrazovaniye par pri blo-shikh energiyakh [Deceleration radiation and formation of pairs under high energies] "Zh ETF", 32, 633, 1957).

There are 4 references: 3 Soviet-bloc and 1 non-Soviet-bloc. The reference to English-language publication reads as follows: A.B. Migdal. Bremsstrahlung and pair production in condensed media at high energies. "Phys.Rev." 103,1811,1956.

ASSOCIATION: Fizicheskiy institut AN Armyanskoy SSR (Physics Institute of the Academy of Sciences Armyanskaya SSR)

SUBMITTED: July 11, 1960

Card 4/4

GARIBYAN, G.M.; GOL'DMAN, I.I.

Particle emission in a laminar medium. Dokl. AN Arm. SSR
31 no. 4:219-225 '60.   (MIRA 13:12)

1. Fizicheskiy institut Akademii nauk Armyanskoy SSR.
Predstaveleno akademikom AN Armyanskoy SSR A.I. Alikhanyanom.
      (Radiation)   (Particles (Nuclear physics))

81674
S/056/60/038/06/10/012
B006/B056

24,4500

AUTHOR: Gol'dman, I. I.

TITLE: Bremsstrahlung[19] at the Boundary of a Medium in Consideration
            of Multiple Scattering

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,
            Vol. 38, No. 6, pp. 1866 - 1869

TEXT: Multiple scattering in a dense medium leads, as is known, to the
occurrence of a bremsstrahlung of extremely relativistic electrons. For
an unbounded medium, this effect has already been quantitatively
calculated by A. B. Migdal. It was the aim of the present paper to in-
vestigate the influence exerted by the boundaries upon this effect, for
which purpose the method used by Migdal is employed, and the so-called
Landau-Pomeranchuk-Migdal effect is taken into account. It is assumed
that the distribution function $w(t, \vec{r}, \vec{v}; \vec{v}_0)$ obeys the equation of

motion (5), in which in the following one goes over to the small-angle
approximation $(\vec{n}\vec{\vartheta} = 0)$. $\vec{v}_0$ is the velocity with which the relativistic

Card 1/2

81674

Bremsstrahlung at the Boundary of a Medium   B/056/60/038/06/10/012
in Consideration of Multiple Scattering   B006/B056

electron (at t = 0) investigated incides perpendicularly upon the sur-
face of the semi-infinite medium. In Fokker-Planck approximation one
obtains the solution (15) and with the introduction of α, β, and γ
one finally obtains (17) as a solution of the equation of motion. After
substitution of the latter into equations (7) and (8), and after it has
been integrated over n, it again gives the result obtained by Migdal.
It is finally shown that, if the energy of the electron $E > E_0$ (for lead
$E_0 \sim 3 \cdot 10^{12}$ ev), $s > 1$ holds in the entire frequency range and, thus, the
approximation method $E = \frac{e^2}{\hbar c} \ln \frac{1}{s}$ holds. The total energy loss on the
boundary grows linearly with energy and exceeds the so-called transition
radiation by six orders of magnitude. With $E < E_0$ the approximate
formula for E holds if $\hbar \omega < E^2/E_0$. The author finally thanks A. B. Migdal
and G. M. Garibyan for discussions. There are 7 Soviet references.

ASSOCIATION: Fizicheskiy institut Akademii nauk Armyanskoy SSR (Physics
Institute of the Academy of Sciences of the Armyanskaya SSR)

SUBMITTED: January 16, 1960

Card 2/2

89487

S/022/61/014/001/007/010
B112/B202

26.2312

AUTHOR: Gol'dman, I. I.

TITLE: Ionization losses and capture of slow, heavy, negative
               particles

PERIODICAL: Izvestiya Akademii nauk Armyanskoy SSR. Seriya fiziko-
               matematicheskikh nauk, v. 14, no. 1, 1961, 79-86

TEXT: The author studies the ionization and excitation of atoms by slow,
negatively charged, heavy particles. While, in general, the behavior
of the atom toward slow particles is adiabatic, an additional mechanism
occurs when negatively charged, heavy particles are captured. This mech-
anism is due to the penetration of such particles into the atom. If the
particle is heavy compared with the electrons, its motion follows the
laws of classical mechanics:

$$\varphi = \int_{R_0}^{R} \frac{M \frac{dR}{R^2}}{\sqrt{2\mu(E+\phi) - \frac{M^2}{R^2}}}$$

Card 1/^{4}

89487

Ionization losses and capture...   S/022/61/014/001/007/010
                                                    B112/B202

is the equation of the trajectory of a particle in the atomic field, where
R and φ are the polar coordinates of the particle in the trajectory plane
with the nulceus as origin, μ - mass, E - energy, M - angular momentum
of the particle, ϕ - the potential of the atom, and k_o the shortest
distance from the nucleus. The vanishing of the denominator in the
trajectory equation signifies that the particle is very close to the
nucleus. The author studies the slowing down of particles in gases. He
distinguishes gases whose atoms are stable toward all particle layers
and gases whose atoms are unstable toward their outer electrons when a
particle comes too close. The Schrödinger equation for the electrons
of the atom reads as follows:

$$i\hbar \frac{\partial \psi}{\partial t} = \left\{ H + V\left[\vec{R}(t)\right] \right\} \psi,$$

where V is the energy of the interaction between electrons and heavy
particles; the following relation is obtained for the excitation

probability: $w_{n'n} = \dfrac{m^2 c^3}{4 z^2 e^2 \hbar\, \omega_{n'n}} A_{n'n} \left| \vec{\ddot{R}}(\omega_{n'n}) \right|^2 ,$

Card 2/ 4

89487

Ionization losses and capture...

S/022/61/014/001/007/010
B112/3202

where $A_{n'n}$ is the probability of an optical transition, $\dot{\vec{R}}(\omega)$ is the Fourier component of the velocity of the ionizing particle. To determine the excitation cross section

$$\sigma_{n'n} = 2\pi \int_{0}^{\infty} w'_{n'n} \varrho \, d\varrho$$

with the collision parameter $\varrho = M/\sqrt{2 \mu E}$, the author approximates the Fourier components of the coordinates of the particle in the Coulomb field by modified Hankel functions and obtains:

$$\sigma_{n'n} = \frac{e^2 m^2 c^3}{2\sqrt{3} \, \hbar \, \omega^3 \, \mu^2 \, v^2} A_{n'n} .$$

Finally, he draws the energy balance of the ionization process assuming that

$$E \ll (\mu z^2 \omega^2)^{1/3}$$

and $\frac{z^2}{\omega \mu} \ll 1$ in the Thomas-Fermi approximation. There are 1 table and

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89467
Ionization losses and capture...   S/022/61/014/001/007/010
                                                 B112, B202

2 Soviet-bloc references.

ASSOCIATION: Fizicheskiy institut AN Armyanskoy SSR
              (Physics Institute AS Armyanskaya SSR)

SUBMITTED: July 11, 1960

Card 4/4

S/051/63/014/004/020/026
E039/E420

AUTHORS: Gol'dman, I.I., Tarkhanyan, R.G.

TITLE: The change of potential in the atom influenced by the optical transition

PERIODICAL: Optika i spektroskopiya, v.14, no.4, 1963, 571-573

TEXT: In some quantum-mechanical problems the deformation of atoms due to optical transitions of the valency electrons must be taken into account.   In this paper the spherically-symmetrical part of this change in potential is examined.   For atoms with a not too small Z an approximate calculation can be carried out using quasi-classical motion of the majority of electrons in the atom.   Starting from Poisson's equation the following expressions are derived for the change in potential in atoms due to removal of valency electrons

$$\Delta V = \frac{4\sqrt{2\Phi}}{\pi} V + \frac{2}{\pi r^2} \int \frac{(2\ell+1)\delta E_\ell}{P_\ell} d\ell - 4\pi |\Psi_{val}(r)|^2 \quad (6)$$

$$\int \frac{\delta E_\ell + V}{P_\ell} dr = 0 \quad (8)$$

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The change of potential ...

S/051/63/014/004/020/026
E039/E420

where ϕ is the unexcited potential and $V \ll \phi$. [Abstracter's note: Other units not defined but self-evident.] Analysis of these equations shows that the contribution to the change in potential both by deep and weakly coupled electrons is not large; this justifies the use of quasi-classical wave functions in the calculations.   The accuracy of Eq.(6) and (8), as in the case of Thomas and Fermi's equation, is determined by the smallness of the parameter $Z^{-\frac{1}{3}}$.   The equations are also expressed in terms of the dimensionless Thomas-Fermi units.

SUBMITTED: September 21, 1962

Card 2/2

L 16880-63   EWT(1)/FCC(w)/EDS   AFFTC/ASD/IJP(C)

ACCESSION NR: AP3005275   S/0056/63/045/002/0246/0250

AUTHOR: Arutyunyan, V. M.; Gol'dman, I. I.; Nagorskiy, G. A.

TITLE: Regge poles for scattering on a Delta potential

SOURCE: Zhur. eksper. i teoret. fiz., v. 45, no. 2, 1963, 246-250

TOPIC TAGS: Regge pole, Delta-function potential, coincidence regression, pole motion

ABSTRACT: The Regge trajectories are investigated for scattering from a delta-function potential, the simplicity of which makes possible a study of details of pole motion such as coincidence recession into the complex plane. Asymptotic pole equations are obtained and the pole motion traced for small and medium positive or negative energies. The point of recession of the poles into the complex plane is established and the direction of their motion away from this point studied. It is concluded that many of the results are valid

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L 16880-63

ACCESSION NR: AP3005275

for an arbitrary potential without singularities at the origin.
Orig. art. has 2 figures and 17 formulas.

ASSOCIATION: Fizicheskiy institut GKAE, Yerevan (Physics Inst.
State Atomic Energy Commission)

SUBMITTED: 24Jan63

SUB CODE: PH

DATE ACQ: 06Sep63

NO REF SOV: 004

ENCL: 00

OTHER: 002

Card 2/2

L 16910-63   EWT(m)/BDS   AFFTC/ASD   AR

ACCESSION NR: AP3005285   S/0056/63/045/002/0312/0315

AUTHOR: Arutyunyan, F. R.; Gol'dman, I. I.; Tumanyan, V. A.

TITLE: Polarization phenomena in Compton effect on a moving electron and possibility of obtaining beams of polarized gamma quanta

SOURCE: Zhur. eksper. i teoret. fiz. , v. 45, no. 2, 1963, 312-315

TOPIC TAGS: gamma quantum polarization, Compton effect, relativistic electron, laser, polarized photon beam

ABSTRACT: The polarization of gamma quanta resulting from Compton scattering of soft photons by relativistic electrons is analyzed. This problem is of interest because the polarization of the primary photons can be chosen in arbitrary manner, for example primaries from lasers. It is shown that the degree of polarization of such photons can approach 100% both in the case of photons scattered at a given azimuth angle and in the case when the polarization state is averaged over this angle. This shows Compton scattering on relativistic electrons to be an efficient means of obtaining polarized gamma quanta, which can help in the solution of many problems such as photoproduction processes, and nuclear photodisintegration. Orig. art. has 11 formulas.
ASSOCIATION: Physics Inst. Main Atomic Energy Comm.
Card 1/2

L 16345-65   EWT(1)/T   IJP(c)/ESD(t)/ESD(gs)/SSD/AFWL/ASD(a)-5/AFETR/
RAEM(a)

ACCESSION NR: AP4049203   S/0022/64/017/005/0093/0097

AUTHOR: Gol'dman, I. I.

TITLE: Production of electron positron pairs by a photon in an
intense electromagnetic field

SOURCE: AN ArmSSR. Izvestiya. Seriya fiziko-matematicheskikh nauk,
v. 17, no. 5, 1964, 93-97

TOPIC TAGS: photon, pair production, Dirac equation, polarization,
ruby laser

ABSTRACT: Inasmuch as perturbation theory is not applicable to pair
production at high proton intensity, the exact solution of the
Dirac equation in the field of a plane wave is used. The pair pro-
duction probability is first calculated in general form, after which
it is assumed that the wave is monochromatic and the polarization is
elliptic. For a plane polarized wave the result agrees with that of

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L 16345-65

ACCESSION NR: AP4049203

H. R. Reiss (Journ. Math. Phys. v. 3, 59, 1962). For very low pho-
ton density in the beam the result goes over into the formula of
Breit and Wheeler for pair production in a collision between two
photons. By way of an example, it is calculated that in the case of
collision of 10-BeV gamma quanta with the beam in a ruby laser the
pair production cross section reaches 10^{-32} cm^2. Orig. art. has:
21 formulas.

ASSOCIATION: Fizicheskiy institut GKAE, Yerevan (Physics Institute
GKAE)

SUBMITTED: 25Mar64   ENCL: 00

SUB CODE: NP   NR REF SOV: 002   OTHER: 004

Card 2/2

ACCESSION NR: AP4031165   S/0056/64/046/004/1-12/1417

AUTHOR: Gol'dman, I. I.

TITLE: Intensity effects in Compton scattering

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 4, 1964, 1412-1417

TOPIC TAGS: Compton scattering, Klein-Nishina formula, laser emission, hard gamma ray absorption, hard gamma ray emission

ABSTRACT: In order to ascertain whether the Compton effect is correctly des-
cribed by the Klein-Nishina formula at extremely large photon densities, such as
can are produced by lasers, and whether processes in which several photons are ab-
sorbed in a single act with subsequent emission of a harder photon are probable
under such conditions, a calculation valid at arbitrary photon densities is pre-
sented for these processes. The method consists of calculating the emission of a
photon by an electron moving in the field of plane electromagnetic wave. The in-
teraction of the incident photons with electron is described by using Wolkov's
exact solution (Z. Physik v. 94, 250, 1935), and the emission of the photon is
treated in first-order perturbation theory. The general formula goes over into
the Klein-Nishina formula in the limiting case of low photon density. For the most

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ACCESSION NR: AP4031165

powerful laser now available/ the effective cross section is found to be ~ 10^{-32} cm^2 and can be increased by increasing the focusing of the laser beam. "The author is grateful to V. Arutyunyan and G. Nagorskiy for discussions." Orig. art. has: 37 formulas.

ASSOCIATION: Fizicheskiy institut GKAE, Yerevan (Physics Institute GKAE)

SUBMITTED: 17Oct63   DATE ACQ: 07May64   ENCL: 00

SUB CODE: NP   NR REF SOV: 003   OTHER: 002

Card   2/2

L 34173-65   EWT(1)/EPA(w)-2/EEC(t)   Pab-10

ACCESSION NR: AP5005167

S/0022/64/017/006/0129/013;

AUTHOR: Gol'dman, I. I.

TITLE: Dirac electron in the field of a plane electromagnetic wave

SOURCE: AN ArmSSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, v. 17, no. 6, 1964, 129-135

TOPIC TAGS: Dirac particle, electromagnetic wave, plane wave, electron state, positron state, orthogonality

ABSTRACT: The author solves the Dirac equation for the case of an arbitrary plane electromagnetic wave; the solution is based on the use of projection matrices, and thus leads to appreciable simplifications. A physical analysis is made of the solution, and in particular the electronic and positronic states are separated in the solutions. The orthogonality of the system of solutions is proved, in view of the importance of the solution to the calculation of Compton scattering of intense photon beams. The case of a monochromatic wave is considered in conclusion. Orig. art. has: 31 formulas.

Card 1/2

L 34173-65

ACCESSION NR: AP5005167

ASSOCIATION: Fizicheskiy institut GKAE, Yerevan (Physics Institute GKAE)

SUBMITTED: 25Mar64 ENCL: 00 SUB CODE: NP, EM

NR REF SOV: 002 OTHER: 005

Card 2/2

L 22134-66   EWT(1)

ACC NR: AP6004937

SOURCE CODE: UR/0056/66/050/001/0199/0201

AUTHOR: Gol'dman, I. I.; Tevikyan, R. V.

ORG: Physics Institute GKAE, Yerevan (Fizicheskiy institut GKAE)

TITLE: Conservation laws for free fields

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 50, no. 1, 1966, 199-201

TOPIC TAGS: group theory, electromagnetic field, mathematic transformation, quantum field theory, motion equation

ABSTRACT: In connection with a new relation, having the form of a conservation law of a certain tensor composed from the electromagnetic fields, recently derived by D. M. Lipkin (J. Math. Phys. v. 5, 696, 1964) and later generalized by T. A. Morgan (ibid. p. 1659), the authors point out that these relations were proved by directly using Maxwell's equation, and that the group-theoretical nature of these new conservation laws remains unexplained. They therefore show that the usual equations of motion for the free fields can be obtained by variation of some nonlocal Lagrangian. The type of nonlocality remains to a large extent arbitrary. The relations of Lipkin and Morgan and some other relations are shown to be the con-

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L 22134-66

ACC NR: AP6004937

_2_

sequence of the invariance of the action integral under the transformations of the group. In this formalism it is immaterial whether the mass of the field particle is zero or nonzero. The results obtained can be generalized to the case of an arbitrary free field. The nonlocal transformations in question form a group. The authors thank A. Ts. Amatuni and V. A. Dzhrbashyan for their interest in the problem and discussions. Orig. art. has: 19 formulas.

SUB CODE: 20,12/ SUBM DATE: 22Jul65/   OTH REF: 003

Card 2/2 BK
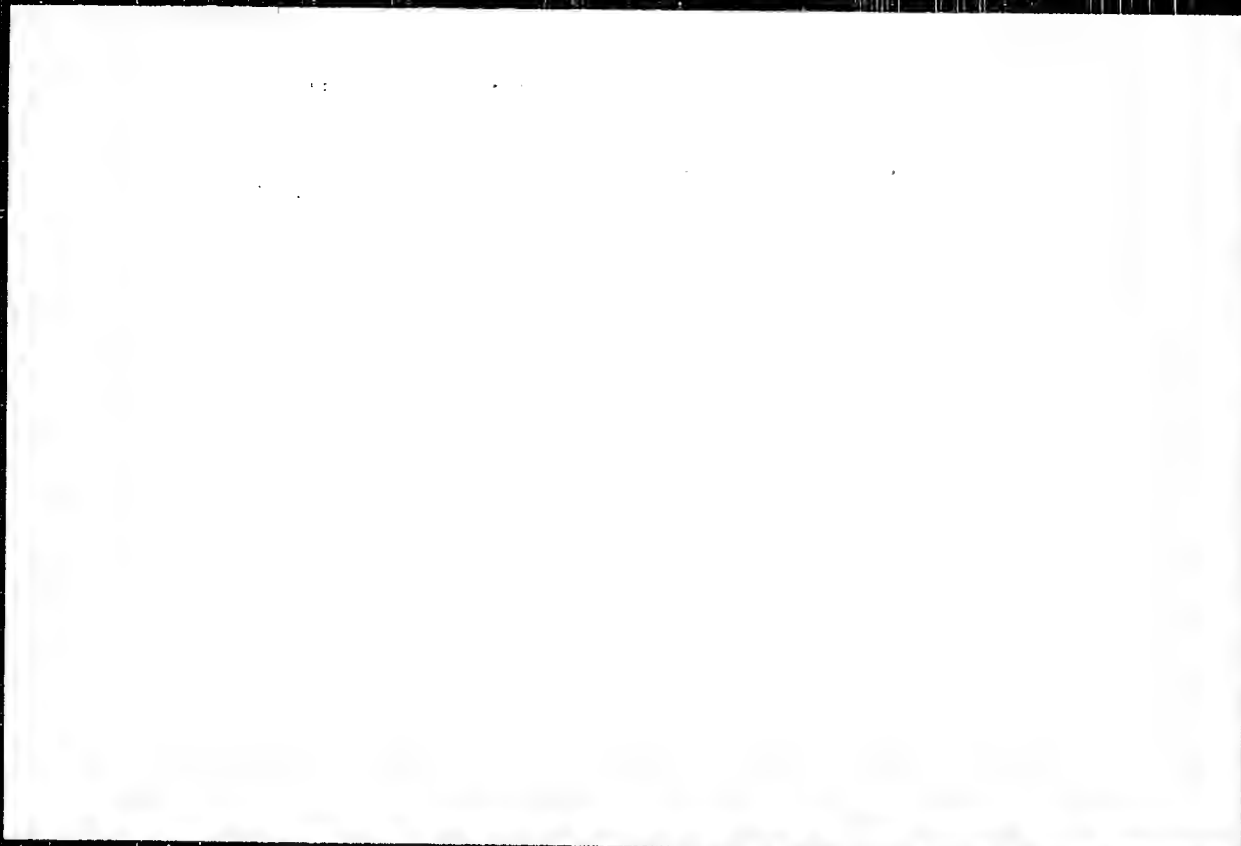
GOL'DMAN, I.L. (Moskva)

Influence of polyglucin on hematopoiesis. Pat. fiziol. i eksp.
terap. 4 no.3:54-60 My-Je '60.   (MIRA 13:7)

1. Iz patofiziologicheskoy laboratorii (zav. - chlen-korrespondent
AMN SSSR prof. N.A. Fedorov) TSentral'nogo ordena Lenina instituta
gematologii i perelivaniya krovi (dir. - deystvitel'nyy chlen
AMN SSSR prof. A.A. Bagdasarov).
                    (POLYGLYUKIN--PHYSIOLOGICAL EFFECT)
                         (HEMATOPOIETIC SYSTEM)

GOL'DMAN, Igor' L'vovich; KOZINER,V.B.,kand.med.nauk, nauchnyy red.;
GUSAKOVA, A.G., red.; SAVCHENKO,Ye.V., tekhn.red.
[The atom is a doctor]Atom - vrach. Moskva, Izd-vo "Znanie,"
1961. 57 p.
            (ATOMIC MEDICINE)   (MIRA 15:10)

KOZINER, V.B.; GOL'DMAN, I.L.

Histamine in the blood following transfusion of polyglucin.
Probl.gemat.i perel.krovi no.5:41-44 '61.   (MIRA 14:9)

1. Iz TSentral'nogo ordena Lenina instituta gematologii i pereli-
vaniya krovi (dir. - deystvitel'nyy chlen AMN SSSR prof. A.A.
Bagdasarov) Ministerstva zdravookhraneniya SSSR.
            (DEXTRAN)   (HISTAMINE)

GOL'DMAN, I.L.

Mechanism of the leukoponic reaction to the administration of
polyglucin. Probl. gemat i perel. krovi 6 no.2:53-58 '61.

(LEUKOPENIA)   (DEXTRAN)   (MIRA 14:2)

GOL'DMAN, I.L.

Study of megakaryocytogram (on the problem of method in calculating
megakaryocytes). Lab. delo 7 no.5:29-33 My '61.   (MIRA 14:5)

1. Patofiziologicheskaya laboratoriya (zav. - chlen-korrespondent
AMN SSSR prof. N.A.Fedorov) TSentral'nogo ordena Lenina instituta
gematologii i perelivaniya krovi, Moskva.
                    (BLOOD CELLS)

GOL'DMAN, I.L.

Comparative analysis of the leucocytic reaction to the effect of polyglucin in the clinic and in an experiment. Biul. eksp. biol. i med. 53 no.4:35-38 Ap '62.

(MIRA 15:4)

1. Iz patofiziologicheskoy laboratorii (zav. - chlen-korrespondent AMN SSSR prof. N.A.Fedorov) TSentral'nogo ordena Lenina Instituta gematologii i perelivaniya krovi (dir. - deystvitel'nyy chlen AMN SSSR A.A.Bagdasarov [deceased]), Moskva. Predstavlena deystvitel'nym chlenom AMN SSSR V.V.Parinym.

(DEXTRAN)   (LEUCOCYTES)

GOL'TMAN, I. L., IL'INA, L. A.

Methodology of [illegible] for the study of human chromosomes. [illegible]
(MIRA [illegible])

1. [illegible]
[illegible]
AN SSSR, Moskva.